

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte BERTHOLD BERENS, JENS FRIEDRICHS, THIMO PAZDZIOR, and
WERNER VOSS

Appeal 2006-3165
Application 10/766,593
Technology Center 3700

Decided: March 9, 2007

Before TERRY J. OWENS, LINDA E. HORNER and ANTON W. FETTING,
Administrative Patent Judges.

HORNER, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

The Appellants seek our review under 35 U.S.C. § 134 (2002) of the Examiner's final rejection of claims 1, 3, and 4.¹ We have jurisdiction under 35 U.S.C. § 6(b) (2002).

SUMMARY OF DECISION

We AFFIRM.

THE INVENTION

The Appellant's claims relate to a punching and scoring backing plate produced from a metal sheet (Specification 1: 9-10). Punching and scoring backing plates serve as counterparts together with punching and scoring tools, typically for producing folding boxes (Specification 1: 23-25). A punching and scoring backing plate has a scoring groove into which the material to be scored is pressed by a scoring-line structure of a punching and scoring tool (Specification 2: 2-6). Claim 1, reproduced below, is representative of the subject matter on appeal.

1. A punching and scoring backing plate, comprising:
an aluminum plate having a thickness, a hard-anodized top layer, and a scoring groove formed therein, said scoring groove having a residual thickness of at least 0.1 mm.

¹ Claims 2 and 6 are canceled, and claims 5 and 7-21 are withdrawn.

THE REJECTION

The Examiner relies upon the following as evidence of unpatentability:

Sinn	US 6,106,453	Aug. 22, 2000
Schulz	US 2003/0045412 A1	Mar. 6, 2003 (filed Jul. 3, 2002)

The following rejection is before us for review:

1. Claims 1, 3, and 4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sinn in view of Schulz.

ISSUE

Appellants contend that the Examiner erred in rejecting claims 1, 3, and 4 because Sinn does not disclose the residual thickness of the scoring groove to be at least 0.1 mm, and it would not be routine skill in the art to provide a groove having this residual thickness (Br. 7-8). Appellants further contend that Sinn discloses a scoring plate made from steel and there would be no motivation to make Sinn's scoring plate of aluminum because changing from steel to aluminum would destroy the wear resistance and reduce the life span of the plate (Br. 9-11). The Examiner found that providing a groove having a residual thickness of 0.1 mm is routine skill in the art since it depends on how deep of a score is desired (Answer 3). The Examiner further found that it would have been obvious to one skilled in the art to make the backing plate of Sinn out of aluminum alloy and anodizing the plate for wear resistance as taught by Schulz (Answer 3). The issue before us is whether Appellants have shown that the Examiner erred in rejecting claims 1, 3, and 4 under 35 U.S.C. § 103(a) as being unpatentable over Sinn and Schulz.

FINDINGS OF FACT

A preponderance of the evidence establishes the following facts:

Sinn discloses a punching and scoring tool having a punching and scoring backing plate (7) with scoring grooves (8a, 8b) (Sinn, col. 2, ll. 33-35 and col. 4, ll. 13-16).

Sinn discloses that it was known in the art to make a backing plate from steel (Sinn, col. 1, ll. 24-25).

Sinn discloses that the punching and scoring tool can be used to process cardboard for folding boxes (Sinn, col. 4, ll. 13-16 and 44-45).

Sinn teaches, "The scoring groove depth 17 depends on the punched material and is selected in such a way that compression results." (Sinn, col. 5, ll. 25-27.)

Sinn further shows a residual thickness in that portion of the plate below the scoring groove (Sinn, Figure 2).

Schulz discloses an embossing roll that is surface treated to improve wear-resistance and roll life (Schulz, paragraph 0002).

Schulz teaches that rigid embossing rolls were generally formed from a steel body which can be directly engraved (Schulz, paragraph 0005).

Schulz teaches, "While a steel roll that has been directly engraved has a longer lifespan, the production of a directly engraved steel roll can require a significant lead time" (Schulz, paragraph 0005).

Schulz also teaches, "[D]irectly engraved steel rolls run the risk that if the emboss pattern gets damaged, a new roll must be produced, the preparation of a

new steel roll can require significant time, possibly resulting in machine down time and definitely resulting in increased expense” (Schulz, paragraph 0008).

The invention of Schulz was intended to reduce the amount of time necessary to get a product into production, but present a surface that will wear well and have a sufficiently long life (Schulz, paragraph 0009).

Schulz discloses an embossing roll that is either a single laser engravable material upon which an embossing pattern is engraved or a rigid core that is coated or sleeved (Schulz, paragraph 0021).

Schulz discloses that the laser engravable material can be aluminum (Schulz, paragraph 0026).

Schulz discloses that as an alternative to applying a wear resistant coating to the roll, an aluminum surface may be hard anodized (Schulz, paragraph 0079).

Schulz describes that anodizing of aluminum is well understood in the art (Schulz, paragraph 0080).

Appellants admit that it was known in the art to create scoring grooves in backing plates by milling (Specification 3: 4-7).

PRINCIPLES OF LAW

To determine whether a prima facie case of obviousness has been established, we are guided by the factors set forth in *Graham v. John Deere Co.*, viz., (1) the scope and content of the prior art; (2) the differences between the prior

art and the claims at issue; and (3) the level of ordinary skill in the art.² 383 U.S. 1, 17, 148 USPQ 459, 467 (1966).

The person of ordinary skill in the art is a hypothetical person who is presumed to know the relevant prior art. *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962, 1 USPQ2d 1196, 1201 (Fed. Cir. 1986). In determining this skill level, the court may consider various factors including “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *Id.* In a given case, every factor may not be present, and one or more factors may predominate. *Id.* at 962-63, 1 USPQ2d at 1201.

In re GPAC, 57 F.3d 1573, 1579, 35 USPQ2d 1116, 1121 (Fed. Cir. 1995).

In addition to our review of the *Graham* factors, we also consider “whether a person of ordinary skill in the art, possessed with the understandings and knowledge reflected in the prior art, and motivated by the general problem facing the inventor, would have been led to make the combination recited in the claims.” *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1337 (Fed. Cir. 2006) (citations omitted). “From this it may be determined whether the overall disclosures, teachings, and suggestions of the prior art, and the level of skill in the art – i.e., the understandings and knowledge of persons having ordinary skill in the art at the

² Although *Graham* also suggests analysis of secondary considerations such as commercial success, long felt but unsolved needs, failure of others, etc., Appellants presented no such evidence of secondary considerations for the Board’s consideration.

time of the invention-support the legal conclusion of obviousness.” *Id.* (citations omitted).

ANALYSIS

Appellants treat claims 1, 3, and 4 as a group. As such, we address representative claim 1, and claims 3 and 4 stand or fall with claim 1.

Sinn teaches a steel punching and scoring backing plate with scoring grooves that can be used to process cardboard for folding boxes. Sinn does not teach making the backing plate of aluminum.

Schulz discloses an aluminum embossing roll that is surface treated by anodizing to improve wear-resistance and roll life. Schulz teaches that making the roll out of anodized aluminum reduces the amount of time necessary to engrave the roll for production compared to steel rolls, and also presents a surface that will wear well and have a sufficiently long life.

A person of ordinary skill in the art, in view of the teachings of Schulz, would be presumed to know that aluminum with an anodized layer would be a suitable substitute for steel in an embossing tool because anodized aluminum is wear resistant and would result in a suitably long tool life. We further find that Schulz’s teaching of replacing a steel roll with an anodized aluminum roll to make engraving of the roller easier and faster would have motivated one having ordinary skill in the art at the time of the invention to have made the backing plate of Sinn out of aluminum, because it was known in the art to mill the scoring grooves in backing plates, and by making the backing plate out of aluminum, the scoring grooves would be easier and less time consuming to manufacture. As such, we

find that a person of ordinary skill in the art, possessed with the understandings and knowledge reflected in the prior art, and motivated by the general problem of manufacturing backing plates, would have been led to make Sinn's backing plate out of aluminum with a hard-anodized top layer, as taught by Schulz.

Neither Sinn nor Schulz explicitly discloses a residual thickness of the scoring groove of at least 0.1 mm. Sinn teaches, however, that the scoring groove depth depends on the punched material and is selected in such a way that compression results. Sinn further shows a residual thickness in that portion of the plate below the scoring groove. We find that one skilled in the art would have been motivated to make the backing plate of a sufficient thickness to provide structural rigidity to the plate when in use and when the plate is removed from the machine. The area of residual thickness of the plate below the scoring groove is a point of structural weakness in the plate. As such, one skilled in the art would have been motivated to make this residual material as thick as possible for the structural integrity of the plate.

Claim 1 requires only that the residual thickness is at least 0.1 mm. In the case of punching cardboard for folding boxes as taught in Sinn, it is noted that the depth of the scoring groove would have to be sufficiently deep to score the cardboard material and provide compression of the material. We find that it would have been obvious to one having ordinary skill in the art, in view of Sinn's use of cardboard material to form folding boxes, to have the depth of score groove greater than 0.1 mm, and thus to have the depth of the residual thickness of the plate below

the groove at least as thick or thicker than the depth of the groove to provide structural rigidity to the plate.

As such, we find that a person of ordinary skill in the art, possessed with the understandings and knowledge reflected in the prior art, and motivated by the general problem of manufacturing backing plates, would have been led to make the portion of Sinn's backing plate at the scoring groove to have a residual thickness of at least 0.1 mm.³

CONCLUSIONS OF LAW

We conclude that the Examiner did not err in rejecting claims 1, 3, and 4 under 35 U.S.C. § 103(a) as unpatentable over Sinn and Schulz.

DECISION

The decision of the Examiner to reject claims 1, 3, and 4 under 35 U.S.C. § 103(a) as unpatentable over Sinn and Schulz is sustained.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

³ We note that the claim refers to "said scoring groove having a residual thickness." The Specification, however, describes only "a residual thickness of the carrier layer" at the base of the scoring groove (Specification 9: 9-11). As such, if Appellants prosecute this application further, it is recommended to amend claim 1 to specify that the *plate* has a residual thickness at the base of the scoring groove of at least 0.1 mm.

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AFFIRMED

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Linda E. Horner
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Anton W. Fetting
ANTON W. FETTING
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